

what is claimed is:

CLAIMS

1. Aluminium alloy strip with high surface homogeneity produced by twin-roll casting, characterised in that its upper side shows, after a 1 μ m thick sulphur anodic treatment, an optical roughness value S_N , measured on three 5 cm longitudinal sections and three 5 cm transverse sections, such that its mean variation on each section, defined by the ratio:

$$(\text{Maximum } S_N - \text{minimum } S_N) / \text{Mean } S_N$$

is less than 20%, and the difference $\Delta S_N = S_N \text{ max} - S_N \text{ min}$ is less than 20.

2. Aluminium alloy strip with high surface homogeneity produced by twin-roll casting and then cold-rolled to a thickness between 4 and 0.1 mm, preferably between 2 and 0.1 mm, characterised in that its upper side, after an acid pickling treatment on a 10 μ m thickness, followed by a 1 μ m thick sulphur anodic treatment, shows an optical roughness value S_N , measured on three 5 cm longitudinal sections and three 5 cm transverse sections, such that its variation is less than 20% and the difference ΔS_N is less than 12.

3. Aluminium alloy strip with high surface homogeneity produced by twin-roll casting, characterised in that its upper side shows, after pickling and sulphur anodic treatment, at least one of the following characteristics:

(a) an S_k value determined by 3D roughness measurement greater than -2.0 and preferentially greater than -1.0;

(b) an E_k value determined by 3D roughness measurement less than 15 and preferentially less than 8.

4. Strip according to claim 3, characterised in that the standard deviation of the value L^* determined according to ASTM D2244-89, section 6.2, calculated on the basis of 20 individual measurements along a generatrix parallel to the longitudinal direction, is less than 0.5 and preferentially less than 0.3.

5. Aluminium alloy strip with high surface homogeneity produced by twin-roll casting, characterised in that its upper side shows, after pickling and sulphur anodic treatment, an S_k value, obtained by 2D roughness measurement analysis of the images obtained with an optical scanner, between -0.2 and +0.3 and preferentially between -0.1 and +0.2.

6. Aluminium alloy strip with high surface homogeneity produced by twin-roll casting and then cold-rolled to a thickness between 4 and 0.1 mm, preferably between 2 and 0.1 mm having undergone at least one finishing pass with polished cylinders, with a roughness $R_a < 0.2 \mu m$, characterised in that its upper side, after electrolytic brightening followed by a $1 \mu m$ thick sulphur anodic treatment, shows an optical roughness value S_N , measured on three 5 cm longitudinal sections and three 5 cm transverse sections, such that its variation is less than 20% and the difference ΔS_N is less than 3.5.

7. Strip according to ^{claim 1} ~~any of claims 1 to 6~~, characterised in that it shows, on the surface of its

upper side, a grain size, measured by image analysis, less than 20 μm , preferably less than 15 μm .

8. Strip according to ^{claim 1} ~~any of claims 1 to 7~~, characterised in that the aluminium alloy is a 1000 series or 8000 series alloy containing between 0.01 and 2% of iron and between 0.01 and 2% of silicon and that the iron content in solid solution is greater than 50 ppm + 0.03 x ppm total Fe.

9. Strip according to ^{claim 1} ~~any of claims 1 to 7~~, characterised in that the aluminium alloy is a 5000 series alloy containing less than 1.5% of Mg.

10. Process for manufacturing a strip with high surface homogeneity by continuous casting between two cooled rolls (5) and (6), from a casting tank (1) containing the liquid metal connected to an injector (2), composed of a lower lip (3) and an upper lip (4), feeding the liquid metal into the gap between the two rolls, characterised in that the upper lip (3) of the injector (2) is recessed by at least 2 mm with reference to the lower lip (4).

11. Process for manufacturing a strip with high surface homogeneity according to claim 10, characterised in that the upper lip (3) of the injector (2) is recessed by at least 5 mm with reference to the lower lip (4).

12. Process according to ^{claim 10} ~~any of claims 10 and 11~~, characterised in that the level of liquid metal in the casting tank (1), measured from the median casting level, is less than 30 mm.

13. ²¹ Process according to claim 12, characterised in that the level of liquid metal in the casting tank

(1), measured from the median casting level, is less than 25 mm.

a 13. Process for manufacturing a strip according to ~~any of claims 1 to 9~~ ^{claim 1} by continuous casting between two
5 cooled rolls (5) and (6), from a casting tank (1) containing the liquid metal connected to an injector (2), comprising a lower lip (3) and an upper lip (4), feeding the liquid metal into the gap between the two
10 rolls, characterised in that the upper lip (3) of the injector (2) is recessed by at least 2 mm with reference to the lower lip (4).

14. Process for manufacturing a strip according to claim 13, characterised in that the upper lip (3) of the injector (2) is recessed by at least 5 mm with
15 reference to the lower lip (4).

15. Process according to ^{claim 13} ~~any of claims 13 or 14~~, characterised in that the level of liquid metal in the casting tank (1), measured from the median casting level, is less than 30 mm.

20 16. Process according to claim 15, characterised in that the level of liquid metal in the casting tank (1), measured from the median casting level, is less than 25 mm.

25 17. Use of a strip according to any of claims 1 to 9 to manufacture optical reflectors.

18. Use of a strip according to any of claims 1 to 9 to manufacture anodised and possible lacquered plates for construction.

30 19. Use of a strip according to any of claims 1 to 9 to manufacture drawn parts.

- (a) $R_m > 165 \text{ MPa}$ and $A > 6\%$,
(b) $R_{0.2} > 160 \text{ MPa}$ and $A > 6\%$

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